WESTERN AUSTRALIA

FORESTS DEPARTMENT

FOREST FIRE DANGER TABLES

A. C. HARRIS
Conservator of Forests

PERTH
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CONTENTS

FIRE DANGER CALCULATION PROCEDURE

1. Obtain *basic fire hazard* from Table A.

2. Multiply basic fire hazard by *rainfall correction factor* from Table B.

3. Obtain *rate of spread index* for 3.0 to 3.5 tons per acre fuel from Table C.

FOR SPECIES OTHER THAN KARRI :

4. Multiply rate of spread index by *fuel correction factor* from Table D for relative forest type.

FOR KARRI :

4A. *Select drought index* from Table D1.

4B. Multiply rate of spread index by *fuel correction factor* from Table D2.

The calculation will give a head fire rate of spread for level ground in feet per minute or chains per hour.

Table A

Apply temperature and relative humidity

Read off *basic fire hazard*

Temp. °F	Relative Humidity %																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	
50	0·6	0·9	1·1	1·3	1·7	1·9	2·1	2·3	2·6	2·8	3·0							
52	0·8	1·1	1·3	1·6	1·9	2·2	2·3	2·5	2·9	3·0	3·2							
54	1·1	1·4	1·5	1·9	2·1	2·4	2·5	2·7	3·1	3·2	3·5							
56	1·3	1·6	1·7	2·1	2·4	2·6	2·8	3·0	3·3	3·5	3·8							
58	1·6	1·8	2·0	2·3	2·6	2·8	3·0	3·2	3·5	3·7	4·0							
60	1·8	2·0	2·2	2·5	2·8	3·0	3·2	3·5	3·7	3·9	4·2	4·4						
62	2·0	2·2	2·4	2·7	3·0	3·3	3·5	3·7	3·9	4·2	4·4	4·6	4·8					
64	2·2	2·4	2·7	2·9	3·2	3·5	3·7	3·9	4·1	4·4	4·6	4·8	5·0	5·3				
66	2·4	2·6	2·9	3·1	3·5	3·7	3·9	4·1	4·4	4·6	4·8	5·0	5·3	5·5	5·7			
68	2·6	2·8	3·1	3·3	3·7	3·9	4·1	4·3	4·6	4·8	5·0	5·3	5·5	5·7	5·9	6·2		
70	2·8	3·0	3·3	3·6	3·9	4·1	4·3	4·6	4·8	5·0	5·3	5·5	5·7	5·9	6·2	6·4	6·6	
72		3·3	3·6	3·9	4·1	4·4	4·6	4·8	5·0	5·2	5·5	5·7	5·9	6·2	6·4	6·6	6·9	
74			3·9	4·1	4·4	4·6	4·8	5·0	5·2	5·5	5·7	5·9	6·2	6·4	6·6	6·9	7·1	
76				4·4	4·6	4·8	5·0	5·2	5·4	5·7	5·9	6·1	6·4	6·6	6·8	7·0	7·3	
78					4·8	5·0	5·2	5·4	5·7	5·9	6·1	6·4	6·6	6·8	7·0	7·3	7·5	
80						5·2	5·4	5·7	5·9	6·1	6·3	6·6	6·8	7·0	7·3	7·5	7·7	
82						5·4	5·6	5·9	6·1	6·3	6·6	6·8	7·0	7·3	7·5	7·7	8·0	
84						5·7	5·9	6·1	6·3	6·6	6·8	7·0	7·2	7·5	7·7	7·9	8·2	
86						5·9	6·1	6·3	6·5	6·8	7·0	7·2	7·5	7·7	7·9	8·2	8·4	
88						6·1	6·3	6·5	6·8	7·0	7·2	7·4	7·7	7·9	8·1	8·4	8·6	
90						6·3	6·5	6·7	7·0	7·2	7·4	7·7	7·9	8·1	8·4	8·6	8·8	
92						6·5	6·7	7·0	7·2	7·5	7·7	7·9	8·1	8·4	8·6	8·8	9·1	
94						6·8	7·0	7·2	7·4	7·7	7·9	8·1	8·3	8·6	8·8	9·0	9·3	
96						7·0	7·2	7·4	7·6	7·9	8·1	8·3	8·6	8·8	9·0	9·3	9·5	
98						7·2	7·4	7·6	7·9	8·1	8·3	8·5	8·8	9·0	9·2	9·5	9·7	
100						7·4	7·6	7·8	8·1	8·3	8·5	8·7	9·0	9·2	9·5	9·7	9·9	

Table B

FOR FOREST TYPES OTHER THAN KARRI

Select average daily temperature class within pertinent rainfall range. Read off *correction factor* under number of drying days since rain

Amount of Last Rain	Average Temp. °F.	Number of drying days since rain												
		1	2	3	4	5	6	7	8	9	10	11	12	13
201 + points	61– 70	0·23	0·39	0·50	0·59	0·66	0·73	0·78	0·83	0·87	0·91	0·95	0·97	1·0
	71– 80	0·27	0·46	0·53	0·70	0·78	0·84	0·91	0·96	1·0				
	81– 90	0·32	0·54	0·70	0·82	0·92	1·0							
	91–100	0·35	0·59	0·76	0·90	1·0								
151–200 points	61– 70	0·24	0·41	0·53	0·62	0·70	0·77	0·83	0·88	0·94	0·96	1·0		
	71– 80	0·28	0·48	0·62	0·73	0·81	0·89	0·95	1·0					
	81– 90	0·35	0·58	0·76	0·89	1·0								
	91–100	0·39	0·66	0·85	1·0									
101–150 points	61– 70	0·28	0·46	0·60	0·71	0·80	0·87	0·94	1·0					
	71– 80	0·33	0·56	0·70	0·82	0·92	1·0							
	81– 90	0·39	0·66	0·85	1·0									
	91–100	0·46	0·77	1·0										
51–100 points	61– 70	0·32	0·53	0·69	0·81	0·91	1·0							
	71– 80	0·35	0·59	0·76	0·90	1·0								
	81– 90	0·39	0·66	0·85	1·0									
	91–100	0·46	0·78	1·0										
21– 50 points	61– 70	0·39	0·65	0·85	1·0									
	71– 80	0·46	0·73	1·0										
	81– 90	0·59	1·0											
	91–100	0·65	1·0											
11– 20 points	61– 70	0·45	0·78	1·0										
	71– 80	0·59	1·0											
	81– 90	0·65	1·0											
	91–100	0·75	1·0											
5– 10 points	61– 70	0·60	1·0											
	71– 80	0·70	1·0											
	81– 90	0·80	1·0											
	91–100	0·90	1·0											

Basic Fire Hazard × Correction Factor = Adjusted Fire Hazard.

Table B1

FOR KARRI FOREST

Select pertinent rainfall range. Read off *correction factor* opposite number of drying days since rain

Amount of last rain (points)	Number of drying days since rain									
	1	2	3	4	5	6	7	8	9	10
201 +	0·07	0·14	0·16	0·23	0·29	0·34	0·39	0·43	0·47	0·50
151–200	0·10	0·19	0·27	0·33	0·39	0·44	0·50	0·54	0·58	0·61
101–150	0·11	0·20	0·29	0·36	0·42	0·49	0·54	0·59	0·62	0·65
51–100	0·13	0·25	0·30	0·37	0·43	0·50	0·56	0·61	0·65	0·68
21– 50	0·16	0·28	0·41	0·50	0·60	0·66	0·72	0·77	0·82	0·86
11– 20	0·24	0·43	0·59	0·68	0·77	0·85	0·90	0·94	0·98	1·0
5– 10	0·40	0·70	0·90	1·0						
1– 4	0·70	1·0								

Amount of last rain (points)	Number of drying days since rain									
	11	12	13	14	15	16	17	18	19	20
201 +	0·53	0·55	0·58	0·61	0·64	0·66	0·68	0·71	0·74	0·77
151–200	0·64	0·67	0·70	0·73	0·75	0·77	0·79	0·81	0·83	0·85
101–150	0·68	0·71	0·73	0·75	0·78	0·81	0·84	0·86	0·88	0·90
51–100	0·71	0·74	0·77	0·80	0·83	0·86	0·89	0·92	0·94	0·96
21– 50	0·90	0·94	0·95	0·96	0·97	0·98	1·0			
11– 20										
5– 10										
1– 4										

Amount of last rain (points)	Number of drying days since rain								
	21	22	23	24	25	26	27	28	29	30
201 +	0·80	0·83	0·86	0·88	0·90	0·92	0·94	0·96	0·98	1·0
151–200	0·87	0·89	0·91	0·93	0·95	0·97	0·98	1·0		
101–150	0·92	0·94	0·96	0·98	1·0					
51–100	0·98	1·0								
21– 50										
11– 20										
5– 10										
1– 4										

Basic Fire Hazard × Correction Factor = Adjusted Fire Hazard.

Ratio	Tower Wind Velocity M.P.H.						
1:1	0·0	0·6	1·1	1·6	2·1	2·6	3·1
	0·5	1·0	1·5	2·0	2·5	3·0	3·5
2:1	0·0	1·1	2·1	3·1	4·1	5·1	6·1
	1·0	2·0	3·0	4·0	5·0	6·0	7·0
3:1	0·0	1·6	3·1	4·6	6·1	7·6	9·1
	1·5	3·0	4·5	6·0	7·5	9·0	10·5
4:1	0·0	2·1	4·1	6·1	8·1	10·1	12·1
	2·0	4·0	6·0	8·0	10·0	12·0	14·0
5:1	0·0	2·6	5·1	7·6	10·1	12·6	15·1
	2·5	5·0	7·5	10·0	12·5	15·0	17·5
6:1	0·0	3·1	6·1	9·1	12·1	15·	18·1
	3·0	6·0	9·0	12·0	15·0	18·	21·0

Apply adjus
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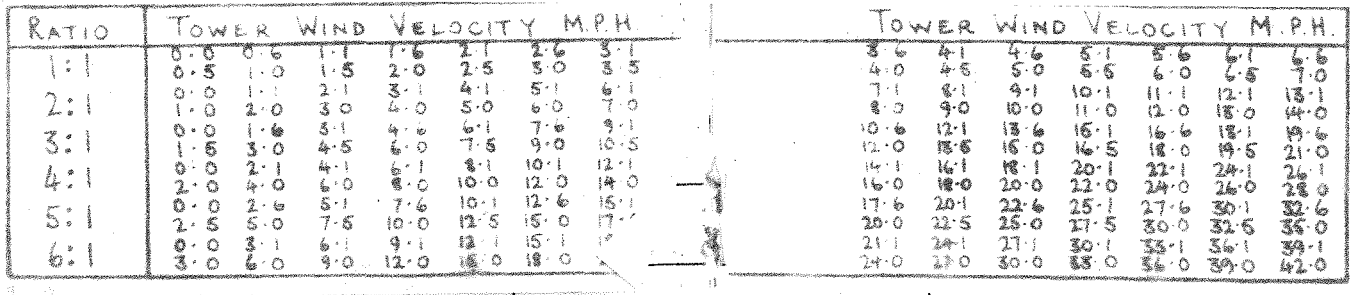
Tower Wind Velocity M.P.H.						
3·6	4·1	4·6	5·1	5·6	6·1	6·6
4·0	4·5	5·0	5·6	6·0	6·5	7·0
7·1	8·1	9·1	10·1	11·1	12·1	13·1
8·0	9·0	10·0	11·0	12·0	13·0	14·0
10·6	12·1	13·6	15·1	16·6	18·1	19·6
12·0	13·5	15·0	16·5	18·0	19·5	21·0
14·1	16·1	18·1	20·1	22·1	24·1	26·1
16·0	18·0	20·0	22·0	24·0	26·0	28·0
17·6	20·1	22·6	25·1	27·6	30·1	32·6
20·0	22·5	25·0	27·5	30·0	32·5	35·0
21·1	24·1	27·1	30·1	33·1	36·1	39·1
24·0	27·0	30·0	33·0	36·0	39·0	42·0

te of spread
chains

NIL	0·6	·02	·02	·02	·02	·02	·02	·02	·03	·04	·05	·07	·09	·12	·16
	0·8	·06	·07	·08	·09	·11	·13	·16	·20	·25	·32	·42	·56	·76	1·03
	1·0	·10	·12	·14	·16	·19	·23	·28	·34	·43	·55	·72	·97	1·31	1·77
LOW	1·2	·12	·14	·16	·19	·22	·26	·31	·38	·48	·61	·80	1·07	1·45	1·96
	1·4	·14	·16	·19	·22	·26	·31	·37	·46	·58	·74	·97	1·30	1·76	2·38
	1·6	·16	·18	·21	·25	·30	·36	·43	·53	·66	·85	1·11	1·43	2·01	2·71
					White										Blue
	1·8	·18	·21	·24	·28	·33	·39	·47	·58	·73	·93	1·22	1·64	2·21	2·98
	2·0	·20	·23	·27	·32	·38	·45	·54	·66	·83	1·06	1·39	1·86	2·51	3·39
	2·2	·22	·25	·29	·34	·40	·48	·58	·72	·89	1·14	1·49	2·0	2·70	3·65
	2·4	·24	·28	·33	·39	·46	·55	·66	·81	1·01	1·29	1·60	2·13	3·07	4·15
	2·6	·26	·30	·34	·40	·47	·56	·68	·82	1·03	1·32	1·72	2·31	3·12	4·21
	2·8	·28	·32	·36	·43	·50	·61	·72	·85	1·06	1·36	1·77	2·37	3·20	4·33
	3·0	·30	·34	·38	·46	·52	·64	·75	·88	1·09	1·40	1·82	2·43	3·28	4·45
								Purple							
	3·2	·32	·36	·41	·48	·55	·67	·77	·91	1·12	1·44	1·86	2·50	3·36	4·57
	3·4	·34	·38	·43	·51	·57	·70	·81	·94	1·15	1·48	1·91	2·56	3·44	4·69
	3·6	·36	·40	·45	·53	·60	·72	·84	·99	1·19	1·52	1·96	2·62	3·52	4·81
	3·8	·38	·42	·47	·55	·63	·75	·87	1·03	1·23	1·56	2·03	2·68	3·60	4·92
	4·0	·40	·45	·51	·58	·67	·78	·91	1·07	1·28	1·60	2·08	2·75	3·71	5·01
MODERATE	4·2	·44	·49	·55	·63	·73	·85	1·00	1·18	1·42	1·78	2·31	3·05	4·12	5·56
										Green					
	4·4	·48	·54	·61	·70	·81	·94	1·10	1·30	1·56	1·95	2·54	3·35	4·52	6·10
											Blue				
	4·6	·52	·58	·66	·75	·86	1·00	1·17	1·38	1·66	2·08	2·70	3·56	4·81	6·49
	4·8	·56	·63	·71	·81	·93	1·08	1·26	1·49	1·79	2·24	2·91	3·84	5·18	6·99
	5·0	·60	·67	·76	·87	1·00	1·16	1·36	1·61	1·93	2·41	3·13	4·13	5·58	7·53
	5·2	·66	·75	·84	·96	1·10	1·27	1·47	1·74	2·10	2·62	3·38	4·24	5·97	8·08
													Brown		
	5·4	·75	·83	·92	1·05	1·20	1·38	1·59	1·88	2·28	2·84	3·66	4·38	6·39	8·66
	5·6	·83	·91	1·00	1·15	1·30	1·50	1·81	2·02	2·46	3·06	3·94	4·53	6·82	9·24
														Yellow	
	5·8	·90	·99	1·09	1·25	1·40	1·62	1·90	2·18	2·62	3·28	4·22	4·69	7·28	9·82
	6·0	1·00	1·09	1·20	1·34	1·51	1·72	1·98	2·32	2·78	3·48	4·45	5·79	7·64	10·3
	6·2	1·10	1·20	1·32	1·48	1·67	1·90	2·19	2·56	3·07	3·84	4·92	6·40	8·46	11·4



AVERAGE	6·6	1·30	1·41	1·55	1·73	1·95	2·21	2·55	2·97	3·56	4·44	5·66	7·38	9·70
				Green										
	6·8	1·40	1·51	1·67	1·83	2·05	2·32	2·65	3·08	3·67	4·53	5·77	7·54	9·86
	7·0	1·50	1·63	1·77	1·95	2·17	2·43	2·77	3·21	3·79	4·62	5·91	7·74	10·4
HIGH	7·2	1·60	1·73	1·89	2·08	2·31	2·59	2·95	3·42	4·04	4·93	6·31	8·27	11·1
	7·4	1·80	1·94	2·12	2·33	2·59	2·90	3·31	3·84	4·53	5·53	7·08	9·28	12·4
	7·6	2·00	2·15	2·32	2·54	2·81	3·15	3·60	4·18	4·90	6·06	7·79	10·2	13·8
				Blue						Brown				
	7·8	2·20	2·23	2·48	2·70	2·97	3·33	3·80	4·44	5·29	6·54	8·47	11·1	15·1
	8·0	2·40	2·50	2·65	2·86	3·15	3·53	4·02	4·70	5·64	7·05	9·17	12·1	16·5
SEVERE	8·1	2·50	2·60	2·76	2·98	3·28	3·67	4·18	4·89	5·87	7·34	9·54	12·6	17·1
	8·2	2·60	2·70	2·86	3·09	3·40	3·81	4·34	5·08	6·10	7·63	9·92	13·1	17·8
	8·3	2·70	2·81	2·98	3·22	3·54	3·97	4·53	5·30	6·36	7·95	10·3	13·6	18·6
	8·4	2·90	3·02	3·20	3·46	3·81	4·27	4·87	5·70	6·84	8·55	11·1	14·7	20·0
	8·5	3·10	3·22	3·41	3·68	4·05	4·54	5·18	6·06	7·27	9·09	11·8	15·6	21·2
	8·6	3·30	3·44	3·67	3·98	4·34	4·85	5·53	6·47	7·77	9·74	12·7	16·7	22·8
					Brown								Pink	
	8·7	3·50	3·66	3·91	4·22	4·61	5·14	5·86	6·86	8·24	10·3	13·4	17·8	24·2
	8·8	3·70	3·88	4·15	4·48	4·88	5·44	6·19	7·25	8·71	11·0	14·2	18·8	25·6
	8·9	4·00	4·20	4·39	4·74	5·15	5·74	6·52	7·64	9·18	11·6	15·0	19·9	27·0
	9·0	4·30	4·43	4·65	4·98	5·4	6·03	6·87	8·04	9·65	12·2	15·8	20·9	28·4
	9·1	4·60	4·74	4·98	5·33	5·81	6·45	7·35	8·60	10·3	13·0	16·9	22·3	30·3
									Yellow		Orange	Pink		
	9·2	4·90	5·05	5·30	5·67	6·18	6·86	7·82	9·15	11·0	13·8	18·0	23·8	32·3
DANGEROUS	9·3	5·20	5·36	5·63	6·02	6·56	7·28	8·30	9·71	11·6	14·7	19·1	25·2	34·3
	9·4	5·60	5·77	6·06	6·48	7·06	7·84	8·94	10·5	12·6	15·8	20·6	27·1	36·9
	9·5	6·00	6·18	6·49	6·94	7·57	8·40	9·58	11·2	13·4	17·0	22·0	29·1	39·6
											Pink			Red
	9·6	6·40	6·59	6·92	7·40	8·07	8·96	10·2	11·9	14·3	18·1	23·5	31·0	42·2
						Yellow								
	9·7	6·80	7·00	7·35	7·89	8·60	9·55	10·9	12·7	15·3	19·3	25·1	33·1	45·0
	9·8	7·30	7·52	7·90	8·45	9·21	10·2	11·7	13·6	16·4	20·6	26·8	35·4	48·1
										Pink				
	9·9	7·80	8·03	8·43	9·02	9·83	10·9	12·4	14·6	17·5	22·0	28·6	37·8	51·4
	10·0	8·20	8·45	8·87	9·49	10·3	11·5	13·1	15·3	18·4	23·2	30·1	39·8	54·1

AVERAGE	6·6	1·30	1·41	1·55	1·73	1·95	2·21	2·55	2·97	3·56	4·44	5·66	7·38	9·70	13·2
				Green											Orange
	6·8	1·40	1·51	1·67	1·83	2·05	2·32	2·65	3·08	3·67	4·53	5·77	7·54	9·86	13·6
	7·0	1·50	1·63	1·77	1·95	2·17	2·43	2·77	3·21	3·79	4·62	5·91	7·74	10·4	14·2
HIGH	7·2	1·60	1·73	1·89	2·08	2·31	2·59	2·95	3·42	4·04	4·93	6·31	8·27	11·1	15·2
	7·4	1·80	1·94	2·12	2·33	2·59	2·90	3·31	3·84	4·53	5·53	7·08	9·28	12·4	17·0
	7·6	2·00	2·15	2·32	2·54	2·81	3·15	3·60	4·18	4·90	6·06	7·79	10·2	13·8	Orange 19·2
				Blue						Brown					
	7·8	2·20	2·23	2·48	2·70	2·97	3·33	3·80	4·44	5·29	6·54	8·47	11·1	15·1	21·5
	8·0	2·40	2·50	2·65	2·86	3·15	3·53	4·02	4·70	5·64	7·05	9·17	12·1	16·5	23·0
SEVERE	8·1	2·50	2·60	2·76	2·98	3·28	3·67	4·18	4·89	5·87	7·34	9·54	12·6	17·1	24·0
	8·2	2·60	2·70	2·86	3·09	3·40	3·81	4·34	5·08	6·10	7·63	9·92	13·1	Pink 17·8	24·9
	8·3	2·70	2·81	2·98	3·22	3·54	3·97	4·53	5·30	6·36	7·95	10·3	Orange 13·6	18·6	26·0
	8·4	2·90	3·02	3·20	3·46	3·81	4·27	4·87	5·70	6·84	8·55	11·1	14·7	20·0	28·0
	8·5	3·10	3·22	3·41	3·68	4·05	4·54	5·18	6·06	7·27	9·09	11·8	15·6	21·2	29·7
	8·6	3·30	3·44	3·67	3·98	4·34	4·85	5·53	6·47	7·77	9·74	12·7	16·7	22·8	31·9
					Brown								Pink		
	8·7	3·50	3·66	3·91	4·22	4·61	5·14	5·86	6·86	8·24	10·3	13·4	17·8	24·2	33·9
	8·8	3·70	3·88	4·15	4·48	4·88	5·44	6·19	7·25	8·71	11·0	14·2	18·8	25·6	35·8
	8·9	4·00	4·20	4·39	4·74	5·15	5·74	6·52	7·64	9·18	11·6	15·0	19·9	27·0	37·8
	9·0	4·30	4·43	4·65	4·98	5·4	6·03	6·87	8·04	9·65	12·2	15·8	20·9	28·4	39·7
	9·1	4·60	4·74	4·98	5·33	5·81	6·45	7·35	8·60	10·3	13·0	16·9	22·3	30·3	42·5
									Yellow		Orange	Pink			
	9·2	4·90	5·05	5·30	5·67	6·18	6·86	7·82	9·15	11·0	13·8	18·0	23·8	32·3	45·2
DANGEROUS	9·3	5·20	5·36	5·63	6·02	6·56	7·28	8·30	9·71	11·6	14·7	19·1	25·2	34·3	48·0
	9·4	5·60	5·77	6·06	6·48	7·06	7·84	8·94	10·5	12·6	15·8	20·6	27·1	36·9	51·0
	9·5	6·00	6·18	6·49	6·94	7·57	8·40	9·58	11·2	13·4	17·0	22·0	29·1	39·6	55·4
											Pink			Red	
	9·6	6·40	6·59	6·92	7·40	8·07	8·96	10·2	11·9	14·3	18·1	23·5	31·0	42·2	59·0
						Yellow									
	9·7	6·80	7·00	7·35	7·89	8·60	9·55	10·9	12·7	15·3	19·3	25·1	33·1	45·0	63·0
	9·8	7·30	7·52	7·90	8·45	9·21	10·2	11·7	13·6	16·4	20·6	26·8	35·4	48·1	67·3
										Pink					
	9·9	7·80	8·03	8·43	9·02	9·83	10·9	12·4	14·6	17·5	22·0	28·6	37·8	51·4	71·9
	10·0	8·20	8·45	8·87	9·49	10·3	11·5	13·1	15·3	18·4	23·2	30·1	39·8	54·1	75·7

1. From Table C, using HAZARD and WIND SPEED determine RATE OF FORWARD SPREAD for 5-year-old fuel (3 tons/acre).
2. From Table 2, using RATE OF FORWARD SPREAD and FUEL AGE or FUEL QUANTITY determine COLOUR of burn being attempted.
3. From Table 3, determine HOURS OF BURNING AVAILABLE.
4. From Table 4, using C.F.S. from Table 2 and HOURS OF BURNING AVAILABLE determine WIDTH OF STRIPS.

E.G.,

Adjusted fire hazard	6·9
Wind at nearest Tower	8 m.p.h.
Rate of spread from Table C	1·9
Burn being attempted	Green
Age of fuel or weight of fuel	3 yrs/1·7 tons
Rate of spread from Table 2 (C.F.S.)	1·7
Temperature from forecast	79°
Hours of burning	10 hours
Strip width C.F.S. = 1·7 ; 10 hours	15 chains
Distance between spots 15 x ½	7½ chains

Obtain WINDSPEED from tower and re-adjust STRIP and SPOT WIDTH every two hours.

Table 4

ESTIMATION OF STRIP WIDTH
(In chains)

Forward Spread C.F.S. from C & 2	Hours of burning time available									
	1 Hr	2	3	4	5	6	7	8	9	10
0·6	0·5	1·0	1·5	2·0	2·5	3·0	3·5	4·0	4·5	5·0
0·7	0·6	1·2	1·8	2·4	3·0	3·6	4·2	4·8	5·4	6·0
0·8	0·7	1·4	2·1	2·8	3·5	4·2	4·9	5·6	6·3	7·0
0·9	0·8	1·6	2·4	3·2	4·0	4·8	5·6	6·4	7·2	8·0
1·0	0·9	1·8	2·7	3·6	4·5	5·4	6·3	7·2	8·1	9·0
1·1	1·0	2·0	3·0	4·0	5·0	6·0	7·0	8·0	9·0	10·0
1·2	1·1	2·2	3·3	4·4	5·5	6·6	7·7	8·8	9·9	11·0
1·3	1·2	2·4	3·6	4·8	6·0	7·2	8·4	9·6	10·8	12·0
1·4	1·3	2·6	3·9	5·2	6·5	7·8	9·1	10·4	11·7	13·0
1·5	1·4	2·8	4·2	5·6	7·0	8·4	9·8	11·2	12·6	14·0
1·6	1·4	2·8	4·2	5·6	7·0	8·4	9·8	11·2	12·6	14·0
1·7	1·5	3·0	4·5	6·0	7·5	9·0	10·5	12·0	13·5	15·0
1·8	1·6	3·2	4·8	6·4	8·0	9·6	11·2	12·8	14·4	16·0
1·9	1·7	3·4	5·1	6·8	8·5	10·2	11·9	13·6	15·3	17·0
2·0	1·8	3·6	5·4	7·2	9·0	10·8	12·6	14·4	16·2	18·0
2·1	1·9	3·8	5·7	7·6	9·5	11·4	13·3	15·2	17·1	19·0
2·2	2·0	4·0	6·0	8·0	10·0	12·0	14·0	16·0	18·0	20·0
2·3	2·1	4·2	6·3	8·4	10·5	12·6	14·7	16·8	18·9	21·0
2·4	2·2	4·4	6·6	8·8	11·0	13·2	15·4	17·6	19·8	22·0
2·5	2·3	4·6	6·9	9·2	11·5	13·8	16·1	18·4	20·7	23·0
2·6	2·3	4·6	6·9	9·2	11·5	13·8	16·1	18·4	20·7	23·0
2·7	2·4	4·8	7·2	9·6	12·0	14·4	16·8	19·2	21·6	24·0
2·8	2·5	5·0	7·5	10·0	12·5	15·0	17·5	20·0	22·5	25·0
2·9	2·6	5·2	7·8	10·4	13·0	15·6	18·2	20·8	23·4	26·0
3·0	2·7	5·4	8·1	10·8	13·5	16·2	18·9	21·6	24·3	27·0

Table 2

Correction of FORWARD SPREAD for fuel age or quantity for JARRAH CONTROL BURNING

LOW and MODERATE FIRE HAZARD							AVERAGE and HIGH FIRE HAZARD					
4·2	3·7	3·2	2·2	1·7	1·2	Fuel Quantity ton/ac.	4·2	3·7	3·2	2·2	1·7	1·2
7	6	5	4	3	2	Fuel age No. leaf falls	7	6	5	4	3	2
Forward Spread ch./hr.						COLOUR INDEX	Forward Spread ch./hr.					
		0·4					0·6		0·4			
0·6		0·5					0·7	0·6	0·5			
0·7	0·6	0·6					0·8	0·7	0·6			
0·8	0·7	0·7	0·6			PURPLE	0·9	0·8	0·7	0·6		
0·9	0·8	0·8	0·7	0·6		Max. Scorch :	1·0	0·9	0·8	0·7	0·6	
1·0	0·9	0·9	0·8	0·7	0·6	Spring 15 ft.	1·1	1·0	0·9	0·8	0·6	0·6
1·1	1·0	1·0	0·9	0·8	0·7	Autumn 27 ft.	1·2	1·1	1·0	0·9	0·7	0·6
1·2	1·1	1·1	1·0	0·9	0·8		1·3	1·2	1·1	1·0	0·7	0·7
1·3	1·2	1·2	1·1	1·0	0·9		1·4	1·3	1·2	1·1	0·8	0·7
1·4	1·3	1·3	1·2	1·1	1·0		1·5	1·4	1·3	1·2	0·9	0·8
1·5	1·4	1·4	1·3	1·2	1·1	GREEN	1·6	1·5	1·4	1·3	1·0	0·9
1·6	1·5	1·5	1·4	1·3	1·2	Max. Scorch :	1·8	1·6	1·5	1·4	1·1	0·9
1·7	1·6	1·6	1·5	1·4	1·3	Spring 20 ft.	1·9	1·7	1·6	1·4	1·1	1·0
1·8	1·7	1·7	1·6	1·5	1·4	Autumn 35 ft.	2·0	1·8	1·7	1·5	1·2	1·1
2·0	1·8	1·8	1·7	1·6	1·5		2·1	2·0	1·8	1·6	1·3	1·2
2·1	2·0	1·9	1·8	1·7	1·6		2·2	2·1	1·9	1·7	1·4	1·3
2·2	2·1	2·0	1·9	1·8	1·7		2·4	2·2	2·0	1·7	1·5	1·4
2·3	2·2	2·1	2·0	1·9	1·8		2·5	2·4	2·1	1·8	1·6	1·5
2·4	2·3	2·2	2·1	2·0	1·9		2·7	2·5	2·2	1·9	1·7	1·6
2·5	2·4	2·3	2·2	2·1	2·0	BLUE	2·8	2·6	2·3	2·0	1·7	1·6
2·6	2·5	2·4	2·3	2·2	2·1	Max. Scorch :	2·9	2·7	2·4	2·1	1·8	1·7
2·7	2·6	2·5	2·4	2·3	2·2	Spring 30 ft.	3·0	2·8	2·5	2·2	1·8	1·7
2·8	2·7	2·6	2·5	2·4	2·3	Autumn 45 ft.		2·9	2·6	2·3	1·9	1·8
2·9	2·8	2·7	2·6	2·5	2·4			3·0	2·7	2·4	2·0	1·8
3·0	2·9	2·8	2·7	2·6	2·5				2·8	2·5	2·1	1·9
	3·0	2·9	2·8	2·7	2·6				2·9	2·6	2·2	2·0
		3·0	2·9	2·8	2·7				3·0	2·7	2·3	2·1
		3·1	3·0	2·9	2·8				3·1	2·8	2·3	2·1
		3·2		3·0	2·9				3·2	2·9	2·4	2·2
		3·3			3·0				3·3	3·0	2·4	2·2
		3·4				Fuel age is only applicable where forest canopy density approximates 60%			3·4		2·5	2·3
		3·5							3·5		2·6	2·4
		3·6							3·6		2·7	2·4
		3·7							3.7		2·8	2·5
		3·8							3·8		2·9	2·6
		3·9							3·9		3·0	2·7
		4·0							4·0			2·8
		4·1							4·1			2·9

JARRAH

Table D

FUEL QUANTITY CORRECTION

Select appropriate hazard class. Read off FUEL CORRECTION FACTOR opposite relative fuel age or weight

Fuel age—years	Fuel Quantity	Low and Mod.	Aver. and High	Severe & Dang.
No. of leaf falls	tons per acre	less than 6·0	6·1–8·0	8·1–10·0
2	1·5 –2·0	0·88	0·71	0·61
3	2·01–2·5	0·92	0·77	0·74
4	2·51–3·0	0·96	0·88	0·87
5	3·01–3·5	1·00	1·00	1·00
6	3·51–4·0	1·04	1·12	1·17
7	4·01–4·5	1·08	1·21	1·30

Table 3

HOURS OF BURNING TIME AVAILABLE

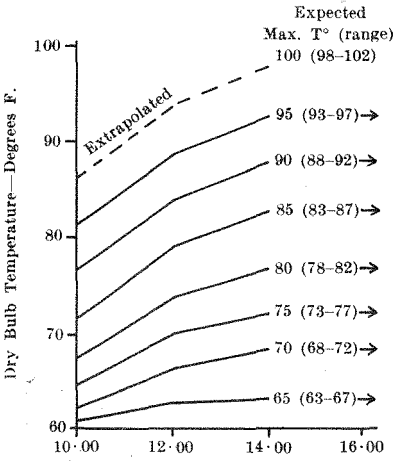
Daily Maximum	SPRING		AUTUMN	
Temp—°F.	Start Time	Hours	Start Time	Hours
61–65	12·00	3	11·30	4
66–70	10·30	7	10·00	8
71–75	10·00	8	09·00	10
76–80	09·30	10	08·00	12
81–85	09·00	11	07·00	14
86–90	08·00	14	06·00	18

Strip Width = Rate of Spread in chains per hour x Hours Available.
Deduct difference between start time and time of lighting from total hours available to obtain remaining hours of burning time.

Adjusted Rate of Spread = Rate of Spread Index x Fuel Correction Factor.

JARRAH

TIME AND TEMPERATURE GRAPH



Apply Temperature and the time it was taken. Read off the expected Maximum temperature from the arrowed line nearest which the data plots.

FUEL QUANTITY ACCUMULATION CHART

No. of leaf falls	Canopy Density—Percent. Crown Cover									
	10	20	30	40	50	60	70	80	90	100
1	0·5	0·5	0·5	0·5	0·5	0·5	0·5	1·2	1·2	1·2
2	0·5	0·5	0·5	0·5	1·2	1·2	1·2	1·7	1·7	2·2
3	0·5	0·5	1·2	1·2	1·7	1·7	2·2	2·2	2·7	2·7
4	1·2	1·2	1·7	1·7	2·2	2·2	2·7	3·2	3·2	3·7
5	1·7	1·7	2·2	2·2	2·7	3·2	3·2	3·7	3·7	4·2
6	1·7	2·2	2·7	2·7	3·2	3·7	3·7	4·2	4·7	4·7
7	2·2	2·7	3·2	3·2	3·7	4·2	4·7	4·7	5·2	5·7
8	2·7	3·2	3·7	4·2	4·7	5·2	5·7	6·2	6·7	7·2

TABLE D1 DROUGHT INDEX

KARRI

HOURS OF BURNING TIME

Daily Maximum Temperature °F.	Start Time	Hours
61–65	12·00	2
66–70	11·00	5
71–75	10·30	7
76–80	10·00	9
81–85	09·30	11
86–90	09·00	14

Adjusted Rate of Spread = Rate of Spread Index × Fuel Correction Factor.

KARRI

Table D2

FUEL QUANTITY CORRECTION

Select the appropriate hazard class. In the drought index column indicated from Table D1 read off the fuel correction factor opposite the relative fuel age or weight

Fuel Age No. of leaf falls	Fuel Quantity Tons per acre E.O.D.W.	Low and Moderate Less than 6·0			Average and High 6·1 to 8·0			Severe and Dangerous Greater than 8·0		
		A	B	C	A	B	C	A	B	C
1	2·0– 2·5	0·0	0·9	1·0	0·0	0·8	1·2	0·4	0·7	1·4
2	3·0– 3·5	0·6	1·0	1·2	0·7	1·0	1·4	0·5	1·0	1·6
3	5·0– 5·5	0·7	1·1	1·5	0·7	1·4	2·2	0·6	1·7	3·0
4	6·0– 6·5	0·9	1·2	1·6	0·8	1·6	2·3	0·7	2·0	3·3
5	7·0– 7·5	0·9	1·3	1·7	0·8	1·8	2·5	0·9	2·3	3·6
6	8·0– 8·5	1·0	1·4	1·8	0·9	2·1	2·7	1·0	2·7	3·9
7	9·0– 9·5	1·0	1·5	1·9	1·0	2·3	2·9	1·1	3·0	4·2
8	9·5–10·0	1·1	1·6	2·0	1·1	2·4	3·1	1·2	3·2	4·6
9	10·0–10·5	1·1	1·7	2·1	1·2	2·5	3·3	1·4	3·3	4·8
10	10·5–11·0	1·2	1·8	2·2	1·3	2·6	3·5	1·5	3·5	5·2
11	11·0–11·5	1·2	1·9	2·3	1·3	2·7	3·6	1·6	3·7	5·5
12	11·5–12·0	1·3	2·0	2·4	1·4	2·8	3·8	1·7	3·9	5·8
12+	13·5–14·0	1·3	2·3	2·8	1·5	3·5	4·2	1·8	4·7	6·5

PINUS

Table D

FUEL QUANTITY CORRECTION

Select appropriate hazard class. Read off the fuel correction factor opposite the relative fuel weight

Age in years	Fuel Quantity	Low and Moderate	Average and High	Severe and Dangerous
	Tons per acre	0·0–6·0	6·1–8·0	8·1–10·0
10	4·0– 4·5	1·1	1·3	1·5
15	7·5– 8·0	1·4	1·9	2·5
20	11·0–11·5	1·6	2·3	3·2
25	14·0–14·5	1·9	2·9	4·3
30	16·0–16·5	2·1	3·3	4·9
35	16·5–17·0	2·2	3·7	5·5

For control burning under pines, use fire dangers uncorrected by fuel factors within the range 0·2–0·6.

DEFINITIONS

Average Daily Temperature = mean of temperatures recorded at 10·00, 12·00, 14·00 and 16·00.

Average Daily Temperature Class = the 10° range in which falls the mean of average daily temperatures of drying days in the period since rain.

A Drying Day = one on which the average daily temperature exceeds 60° F. and on which no rain fell after 09·00.

When to Accumulate Rainfall = falls of rain over a period not broken by a drying day. If recent rain falls are separated by drying days giving more than one possible correction factor accept the numerically lowest factor.

Number of Days Since Rain = the total of drying days since rain, including the day for which the fire danger is being calculated.

Fire Danger Index = the maximum rate of spread predicted from forecasted weather for level topography, 60% crown cover and standard fuel conditions for each forest type, namely

JARRAH .... 3·0– 3·5 tons per acre.
KARRI .... 13·5–14·0 tons per acre.
PINE .... 16·0–16·5 tons per acre.

Fire Danger Classes

Colour Code	Rate of Spread
WHITE	0·00 to 0·59 feet per minute or chains per hour.
PURPLE	0·60 to 1·00 ,, ,, ,, ,, ,, ,, ,,
GREEN	1·1 to 2·0 ,, ,, ,, ,, ,, ,, ,,
BLUE	2·1 to 3·0 ,, ,, ,, ,, ,, ,, ,,
BROWN	3·1 to 7·0 ,, ,, ,, ,, ,, ,, ,,
YELLOW	7·1 to 12·0 ,, ,, ,, ,, ,, ,, ,,
ORANGE	12·1 to 16·0 ,, ,, ,, ,, ,, ,, ,,
PINK	16·1 to 20·0 ,, ,, ,, ,, ,, ,, ,,
RED	20·1 + ,, ,, ,, ,, ,, ,, ,,

Flame height = Rate of Spread in feet x 2 approximately.
Scorch height = Flame height x 5 approximately.

PRELIMINARY DESPATCHER

JARRAH

Fire Danger	Time Between Detection and Attack															
	½ hour				1 hour				1½ hours				2 hours			
	G.	H.D	L.T	B.D.	G.	H.D	L.T	B.D.	G.	H.D	L.T	B.D.	G.	H.D	L.T	B.D
White	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
Purple	1	1	0	0	1	1	0	0	1	1	1	0	1	1	1	0
Green	1	1	0	0	1	1	1	0	2	2	1	0	2	2	1	0
Blue	2	2	0	0	2	2	1	0	3	2	2	0	3	3	1	0
Brown	2	2	1	0	3	3	1	1	4	4	2	1	4	4	2	1
Yellow	3	3	1	0	3	3	2	1	4	4	3	1	5	5	3	2
Orange	3	3	1	1	4	4	2	2	5	5	3	2	6	6	4	3
Pink	4	3	2	1	5	5	3	3	6	6	3	3	7	7	5	5
Red	4	4	2	2	6	6	3	4	7	7	4	4	8	8	5	6

KARRI

Fire Danger	Time Between Detection and Attack															
	½ hour				1 hour				1½ hours				2 hours			
	G.	H.D	L.T	B.D.	G.	H.D	L.T	B.D.	G.	H.D	L.T	B.D.	G.	H.D	L.T	B.D
White	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Purple	1	1	1	0	1	1	1	0	1	1	1	1	2	1	1	1
Green	1	1	1	0	2	1	1	1	2	2	1	1	3	2	2	2
Blue	2	1	1	1	2	2	2	1	3	2	1	2	4	3	3	3
Brown	2	2	2	1	3	3	2	1	4	4	3	3	5	5	4	4
Yellow	2	3	2	1	3	4	3	2	4	5	3	4	6	6	5	5
Orange	3	3	2	1	4	5	3	2	5	6	4	4	6	6	5	5
Pink	4	3	3	2	5	6	4	3	6	7	4	5	7	7	6	7
Red	4	4	3	2	6	6	4	4	7	7	5	5	8	8	7	7

G. = Gang.
H.D. = Heavy Duty.
L.T. = Light Tractor (wheel blade or equivalent)
B.D. = Bulldozer.

TABLES

PINE

Fire Danger	Time Between Detection and Attack														
	10 minutes			½ hour			1 hour			1½ hours			2 hours		
	G.	H.D	B.D.	G.	H.D	B.D.	G.	H.D	B.D.	G.	H.D	B.D.	G.	H.D	B.D
White	1	0	0	1	0	0	1	0	0	1	1	0	1	1	0
Purple	1	1	0	1	1	0	1	1	0	2	2	0	3	3	1
Green	1	1	0	2	1	0	2	2	1	3	3	1	5	5	2
Blue	1	2	0	2	2	1	2	2	2	5	5	3	7	7	4
Brown	2	2	0	2	2	1	3	3	2	7	7	4	9	9	5
Yellow	2	2	0	4	3	1	5	4	2	9	8	4			
Orange	2	2	1	5	4	1	7	5	2						
Pink	3	3	1	6	5	2	8	7	3						
Red	3	3	1	7	6	2	11	8	3						

G. = Gang.

H.D. = Heavy Duty.

B.D. = Fuel separating machine, *viz.*, bulldozer or tractor and plough.

McARTHUR SLOPE CORRECTIONS

Slope in degrees	Spread Factor
— 10 degrees	0·6
— 5	0·8
Level	1·0
+ 2	1·1
+ 4	1·3
+ 6	1·5
+ 8	1·7
+ 10	2·0
+ 15	2·8
+ 20	4·0

The factor is 1·0 for level ground and doubles for every 10 degree increase in slope.

Table C1

Wind Velocity Ratios for Table C

Forest Type	Height of Tower above canopy (ft.)		
	0	50	100
(a) Jarrah			
(i) 60% Canopy			
Ridge	3:1	4:1	5:1
Lower Slope	4:1	5:1	6:1
(ii) 30% Canopy			
Ridge	2:1	3:1	4:1
Lower Slope	3:1	4:1	5:1
(iii) Flats	1:1	2:1	2:1